GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Economic environment, PG_00062731		
Field of study	Technologies for Industry 5.0		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Humanistic-social subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Theoretical Physics and Quantum Informaton -> Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Patryk Jasik	
	Teachers	dr inż. Patryk Jasik	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 1647 Otoczenie gospodarcze 2025
https://enauczanie.pg.edu.pl/2025/course/view.php?id=1647

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	30	2.0	18.0	50

Subject objectives

Gaining knowledge in the use of cutting-edge technologies in Industry 5.0.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W04] demonstrates knowledge necessary to understand non-technical (legal, economic, ethical, environmental) conditions of engineering activities in the scope directly or indirectly related to the industrial revolution	The student demonstrates the knowledge necessary to understand non-technical (legal, economic, ethical, environmental) conditions of engineering activities directly or indirectly related to the Industrial Revolution 5.0.	[SW3] Assessment of knowledge contained in written work and projects
[K6_W03] demonstrates knowledge on materials used in industrial technologies, their structure and fabrication, knows the principles of conducting research, analyzing it and creating technical documentation	The student demonstrates knowledge of technologies used in Industry 5.0, understands the principles of conducting research, performing analysis, and creating technical documentation.	[SW3] Assessment of knowledge contained in written work and projects

<table>
<tr><td>Subject contents</td><td colspan="3">Discussion on the Definition of Industry 5.0

Industry 5.0 is the next stage of the industrial revolution, focusing on harmonious collaboration between humans and machines, emphasizing product personalization, sustainability, and the integration of advanced technologies with elements of human creativity and innovation.

Examples of Technologies Used in Industry 5.0

1. Internet of Things (IoT)
2. Artificial Intelligence (AI)
3. Collaborative Robotics (Cobots)
4. Blockchain
5. 3D Printing
6. Augmented and Virtual Reality (AR/VR)
7. Big Data and Advanced Data Analytics
8. 5G Networks
9. Sustainable Development Technologies

Course "Economic Environment"

As part of the course "Economic Environment," students will explore the broad economic and business context in which Industry 5.0 technologies operate. Students will have the opportunity to participate in meetings with representatives from corporations, companies, and small and medium-sized enterprises that implement and utilize Industry 5.0 technologies. These meetings will take place both at the university and through study visits to these enterprises, allowing students to directly engage with the practical applications of the discussed technologies and understand their impact on the modern economic environment.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Report on the Use of Industry 5.0 Technologies in a Selected Enterprise.</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Armando Martin, Industry 5.0. Introductory guide to the fifth industrial revolution, Editoriale Delfino</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Kenneth Cukier, Victor Mayer-Schonberger, "Big Data :A Revolution That Will Transform How We Live, Work, and Think", Eamon Dolan/ Houghton Mifflin Harcourt

Eamon Dolan/Houghton Mifflin Harcourt</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
</table>

Example issues/ example questions/ tasks being completed	Guidelines for Creating a Report on the Use of Industry 5.0 Technologies in a Selected Enterprise 1. **Introduction** • **Description of the Enterprise**: Provide a brief description of the selected enterprise, including its history, main products or services, and the sector in which it operates. • **Purpose of the Report**: Explain the purpose of the report, which is to analyze the use of Industry 5.0 technologies in the enterprise. 2. **Overview of Industry 5.0 Technologies in the Enterprise** • **Description of Implemented Technologies**: Identify and describe the Industry 5.0 technologies implemented in the enterprise. • **Purpose of Implementation**: Explain the goals the enterprise aimed to achieve by implementing these technologies (e.g., increased efficiency, improved product quality, cost reduction, sustainable development). 3. **Analysis of the Impact of Technologies on the Enterprise's Operations** • **Impact on Business Processes**: Analyze how the implemented technologies have affected key business processes in the enterprise (e.g., production, logistics, resource management). • **Benefits and Savings**: Determine the financial and operational benefits and savings the enterprise has achieved through the use of Industry 5.0 technologies. • **Impact on Employees**: Investigate how these technologies have impacted employees, their roles and skills, and the organizational culture. 4. **Challenges and Barriers** • **Identification of Problems**: Identify the main challenges and barriers the enterprise faced during the implementation of Industry 5.0 technologies (e.g., implementation costs, lack of skills, employee resistance). • **Mitigation Strategies**: Describe the strategies and actions taken by the enterprise to overcome these challenges and barriers. 5. **Conclusions and Summary**: Present the key findings from the analysis, highlighting the main benefits and challenges associated with the use of Industry 5.0 technologies in the enterprise.
Work placement	Not applicable

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